Do The Math

Aligns to Enhancing Education Through Technology Criteria

The primary goal of the *Enhancing Education through Technology (*Ed Tech) program is to improve student academic achievement through the use of technology in schools. .According to the federal *Guidance on the Enhancing Education through Technology (Ed Tech) Program*, a Local Education Agency's (LEA) technology plan must address 13 specific components in order to qualify for formula or competitive funding. The following chart details how *Do The Math* helps meet 12 of these requirements.

Required *Ed Tech* Components	📖 *Do The Math*
1. Strategies for improving academic achievement and teacher effectiveness: A description of how the applicant will use *Ed Tech* funds to improve the academic achievement, including technology literacy, of all students attending schools served by the LEA and to improve the capacity of all teachers in schools served by the LEA to integrate technology effectively into curriculum and instruction	*Do The Math*, created by Marilyn Burns along with a team of *Math Solutions* Master Classroom Teachers, gives students who have fallen behind a chance to catch up and keep up. Focusing on numbers and operations—the cornerstone of elementary math education—*Do The Math* helps students in grades 2-8 build a solid foundation in computation, number sense, and problem solving for immediate and long-term learning. The program addresses the diverse needs of all students. Incorporating research-based instructional strategies to specifically meet the needs of students who struggle with math, the program helps students to gain necessary conceptual understanding of addition, subtraction, multiplication, division, and fractions. *Do The Math* consists of 12 modules that target addition and subtraction, multiplication, division, and fractions. Each module includes a series of thirty, 30-minute step-by-step lessons. The proven instructional strategies include: ▪ Well organized, manageable lessons that help students build a solid foundation of understanding ▪ Explicit, intentional instruction based on teaching for understanding ▪ Multiple strategies used for developing concepts and skills ▪ Four-phase pedagogy built on gradual release that prepares students for individual success ▪ Student interaction that deepens the connections students make to the skills and strategies ▪ Motivating practice that provides students the opportunity to strengthen and extend their learning ▪ Vocabulary instruction that helps students develop effective communication and understanding about math ▪ Ongoing assessment that allows teachers to differentiate instruction

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2. Goals: A description of the applicant's specific goals, aligned with challenging state standards, for using advanced technology to improve student academic achievement	*Do The Math* covers foundational topics for algebra and as such is not grade-level specific. However, Grades Two through Eight are the grades where the foundations for Fluency with Whole Numbers and Fluency with Fractions should be established. The program targets four numeracy topics that are further scaffolded into twelve modules that are sequenced and paced to move from basic conceptual understanding to more complex calculations. This gives the program the flexibility to span multiple grades. Every module includes a series of thirty step-by-step lessons. ▪ The Addition and Subtraction Topic covers Addition with sums up to one hundred, Subtraction with numbers up to one hundred, and Numbers greater than one hundred. ▪ The Multiplication Topic covers Basic Concepts of Multiplication, Facts through twelve times twelve, and Factors greater than twelve. ▪ The Division Topic covers Basic Concepts of Division, Facts through one hundred divided by ten, and Dividends to one thousand. ▪ The Fractions Topic covers Basic Concepts of Fractions, Equivalence and Comparison, and Addition and Subtraction of Fractions. Each of the twelve *Do The Math* modules follows a consistent structure. Lessons are carefully scaffolded and paced to give students a chance for optimal learning. Every fifth lesson assesses students to determine what they have learned. Teachers are provided with additional strategies for students still struggling as well as those ready for a challenge. An easy-to-use Objectives Tracker provides an ongoing record of each student's growth achievement.
3. Steps to increase accessibility: A description of the steps the applicant will take to ensure that all students and teachers have increased access to technology	The *Do The Math Interactive Whiteboard Tools* are a series of interactive whiteboard tools that turn math lessons into engaging and visual experiences. The *Interactive Whiteboard Tools* support instruction in all four program strands—Addition & Subtraction, Multiplication, Division, and Fractions. The easy-to-use demonstration tools are ideal for small- or whole-group instruction and can be used on any whiteboard or classroom computer to help students better visualize math concepts and skills.

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4. Promotion of curricula and teaching strategies that integrate technology: A description of how the applicant will identify and promote curricula and teaching strategies that integrate technology effectively into curricula and instruction, based on a review of relevant research and leading to improvements in student academic achievement	*Do The Math Interactive Whiteboard Tools* are completely integrated with the curriculum. When the teacher clicks on the Main Menu he or she gets a list of lessons rather than a list of tools. As the teacher teaches the lesson using the *Do The Math* teacher's guide, he or she clicks on the appropriate tool, activity, or game, each of which is described in the print lesson. The tools are not an addition or supplement to the lesson, they are an integral part of the lesson. The tools can also be used flexibly and independently. The tools were created so that the teacher could use the program effectively for whole class instruction or with larger groups of students. *Do The Math* is an intervention program that was intended to serve small groups of students, making demonstration table-top manipulative materials effective tools in that environment. However, for larger groups of students, the interactive whiteboard is more effective in that it is easy to see, it is motivating, and engages all students. *Do The Math* is intended for students who are not having success in math and are missing key foundations. The interactive whiteboard tools engage students; research confirms that if students are engaged with the math, getting the foundations they need, and getting the much needed practice, they will become more confident, more proficient, and have a more positive disposition towards math. The interactive games and activities have been designed to be identical in look and feel to the actual physical models that come with the program. Thus, teachers who have access to interactive whiteboards have the option of using the physical manipulative materials, the software manipulative materials and tools or a combination of both.
5. Professional development: A description of how the applicant will provide ongoing, sustained professional development for teachers, principals, administrators, and school library media personnel to further the effective use of technology in the classroom or library media center	*Do the Math* offers a variety of professional development solutions: <u>*Do The Math* Implementation Training</u> This half-day training helps teachers to successfully get started using the program in their classrooms. They will learn how to effectively use the program, including: ▪ Navigating the program materials and exploring how they address current issues in math intervention ▪ Experiencing the pace of a *Do The Math* module with tips for implementing instructional strategies ▪ Assessing student progress and learning how to differentiate instruction ▪ Reviewing ongoing math professional development opportunities *(Continued)*

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Professional development: Continued	**Embedded Professional Development** The *Teacher Guide* provided for each module of the program provides step-by-step teaching instructions, clear models, modified scripting, and guidance for monitoring student progress. Supporting Instruction, Language Development, and Mathematical Background boxes at point-of-use provide professional information that helps prevent learning, and well as teaching stumbling blocks.
6. Technology type and costs: A description of the type and costs of technology to be acquired with education technology funds, including provisions for interoperability of components	Recommended: An Interactive Whiteboard that connects to both a computer and projector. (Please note that the *Do The Math* Interactive Whiteboard Tool will have the same functionality using a computer with a projector that projects onto a blank wall.)

Platform	Operating System	Processor	Memory	Other Applications
Windows®	Windows 2000 Windows XP Pro Windows Vista	Pentium III, 1 GHz	512 MB	
				Flash 9
Macintosh®	Mac OS X 10.3.9 Mac OS X 10.4.11 PPC / Intel Mac OS X v10.5	G4, 1.25 GHz / Intel Dual-Core, 1.6 GHz	512 MB	

The *Do The Math* Interactive Whiteboard Tools CDs are compatible to work with any Whiteboard Application. Internet is not required or necessary.

The following workstation operating systems are not supported: Windows 95, 98, 98SE, CE, NT, ME, XP Home, 2000 Home; Mac OS 8.0 to 9.X & Mac OS X v10.0 – 10.2.8. If schools use hardware that does not meet the system requirements, the application may run correctly; however, it may run slower than desired. All features will be present and function properly.

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7. Coordination with other resources: A description of how the applicant will coordinate activities funded through the education technology program with technology-related activities supported with funds from other sources	*Do The Math* can be integrated with funds from state, local, and other sources. The federal funding programs for which it qualifies include: ▪ Title IA—Improving Basic Programs ▪ Title IA—Supplemental Educational Services ▪ Title III—English Language Acquisition ▪ 21st Century Community Learning Centers ▪ IDEA, Part B ▪ IDEA, *Response to Intervention*

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8. <u>Integration of technology with curricula and instruction</u>: A description of how the applicant will integrate technology (including software and electronically delivered learning materials) into curricula and instruction, and a timeline for this integration	The *Interactive Whiteboard Tools* can be seamlessly integrated into *Do The Math* instruction and lessons. The Interactive Whiteboard Tools lend themselves to the first 3 steps of the Gradual Release Model- one of *Do The Math's* instructional strategies. Teachers can visually model and record mathematical representation using the Interactive Whiteboard Tools during small group and whole class instruction. The teacher can model a concept and skill, eliciting responses from students who can interactive with the tools as a group. In the last phase of the gradual release model, the teacher would direct students to work individually or in pairs with their individual manipulative materials and *WorkSpace* books included in the program. Each module begins with a Beginning Module Assessment. After the Beginning Module Assessment, teachers and student can choose to use the tools daily and incorporate them into every lesson. The teacher can use the Interactive Whiteboard Tools anytime the Teacher's Guide instructs them to model a problem or skill with manipulative materials, write equations, introduce a game, and complete a *WorkSpace* page. Teachers are able to access the tools and *WorkSpace* pages easily because they are organized by lesson.
9. <u>Innovative delivery strategies</u>: A description of how the applicant will encourage the development and use of innovative strategies for the delivery of specialized or rigorous courses and curricula through the use of technology, including distance-learning technologies, particularly in areas that would not otherwise have access to such courses or curricula due to geographical distances or insufficient resources	The *Do The Math eTools* meets the needs of teachers who aim to use technology to motivate, encourage, and help change students' attitudes towards math. Because today's students are technology-oriented, the *eTools* reach students who are not successful at traditional paper and pencil math computation. Teachers and students are able to write equations with whole numbers and fractions, draw lines, draw open number lines, and more on the interactive whiteboard. This feature allows teachers to maintain flexibility when recording students' responses and model their thought processes. The *eTools* can be used with whole-class instruction, as well as small-group instruction.
10. <u>Parental involvement</u>: A description of how the applicant will use technology effectively to promote parental involvement and increase communication with parents, including a description of how parents will be informed of the technology used	*Do The Math* offers a *Community Newsletter*, available in English and Spanish that is sent home after every fifth lesson. Through this ongoing communication, parents are informed of the topics and concepts that have been presented in the classroom. The newsletter also includes suggested activities and practice games for students to try at home. In addition, teachers can share *WorkSpace* pages and assessment results with parents

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11. <u>Accountability measures</u>: A description of the process and accountability measures that the applicant will use to evaluate the extent to which activities funded under the program are effective in integrating technology into curricula and instruction, increasing the ability of teachers to teach, and enabling students to reach challenging state academic standards	*Do the Math's* research-based instructional strategies and embedded assessments ensure that students receive appropriate instruction at the exact level of their need. *Do the Math* has a Beginning-of-Module Assessment for each of its twelve modules. Through a mix of multiple choice and open-ended questions, it yields results and information that help teachers determine which students are in need of more intense interventions. The Beginning-of-Module Assessment, administered prior to instruction, is given to students that the teacher has identified as needing instruction on that particular topic. The assessment will reveal what students know in regard to the topic content for that module. The first few questions on the assessment will inform whether the student has the prerequisite skills for that module. If not, the student will need additional support before beginning that module. Additional support may mean moving the student into another module. Each module also includes an End-of-Module Assessment with questions similar to the Beginning-of-Module Assessment so that the teacher can measure student growth. *Do the Math* also includes several periodic assessments that check student progress and help teachers adjust instruction accordingly. Progress monitoring in the form of a written formative assessment occurs after every fifth lesson so teachers can quickly identify and provide immediate support. During every fifth lesson, students independently complete a written assessment which mirrors what they have been working on in the previous four lessons. Teachers then use the results to select and implement the suggestions for differentiation included in the program and make decisions about targeting instruction according to each student's needs. Formative Assessment through daily observations is built into the program so students receive the proper attention and differentiation required to enable them to develop conceptual understanding and skills successfully. Supporting instruction boxes appear frequently to highlight opportunities for teachers to observe student understanding and provide additional support.

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12. Supporting resources: A description of the supporting resources, such as services, software, other electronically delivered learning materials, and print resources, that will be acquired to ensure successful and effective uses of technology	*Do The Math* provides comprehensive support for teachers and students. ▪ The Student *Workspace* assignments are integrated into the lessons. Pages are designed to support students' transition to independent work and to help teachers monitor students' progress. The Annotated Teacher Version is a replica of the Student Version and shows answers to help with quick monitoring. ▪ *Student Pair Materials* are hands-on to support student learning. ▪ *Games* for providing student practice are integrated into the lessons and are also provided in a games bag which can be used in a math center or outside the regular classroom for additional practice. ▪ *Read-Alouds* support the mathematics in each module. Children's literature is incorporated into each module to provide an engaging springboard for instruction. ▪ *Teacher Guides* give teachers the information necessary for teaching the lessons, including step-by-step teaching instructions, guidance for monitoring student progress, and specifics about how to use the other materials provided in the program. ▪ *Teacher Demonstration Materials* needed for instruction are provided in a separate mesh bag for easy access. ▪ *Interactive Whiteboard Tools* enhance the teaching of math skills and turn every lesson into an engaging, hands-on experience. ▪ *TeacherSpace* professional resources related to the program, including a CD-ROM with videos, producibles, and professional articles. ▪ A *Professional Resource Book* from the Teaching Arithmetic series published by Math Solutions provides mathematical and pedagogical support for the particular topic addressed in the module.

■ SCHOLASTIC